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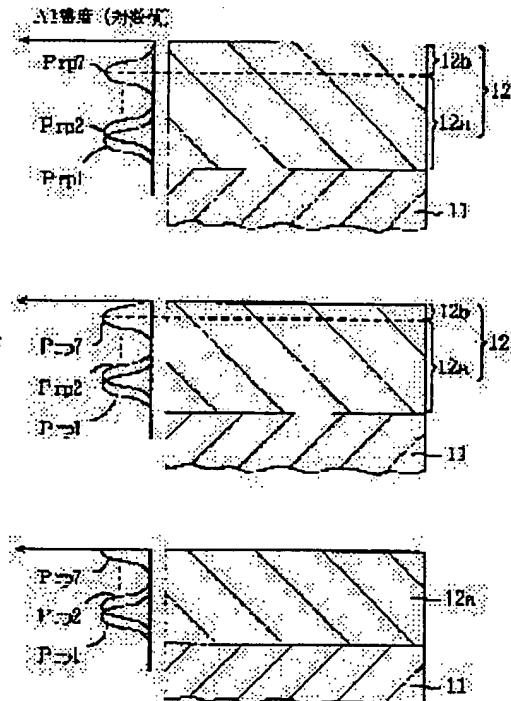
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(54) METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE

(57) Abstract:

PROBLEM TO BE SOLVED: To provide a means for removing the surface part of an ion implantation layer in a semiconductor layer without causing new damage in a method for manufacturing a semiconductor device possessed of the semiconductor layer containing Si and C and serving as an active region.

SOLUTION: Impurity ions are implanted into an SiC substrate 11 in a multistage manner, by which an implanted layer 12 having several concentration peaks of impurity ion is formed in the SiC substrate 11. Thereafter, etching gas such as hydrogen gas is introduced into a chamber while the SiC substrate 11 is heated in the chamber, by which the SiC substrate 11 is subjected to annealing, the upper implanted layer 12b of the implanted layer 12 is removed, and a lower implanted layer 12a is left unremoved. The surface impurity concentration of the lower implanted layer 12a can be easily set at a certain value suitable for forming a Schottky electrode or an ohmic electrode, and the upper implanted layer 12b containing many defects is removed, so that the surface region of the substrate 11 can be improved in crystallinity.



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